



Air Quality Summary—July 2012



Baton Rouge Area

OZONE

There was one (1) day that exceeded the National Ambient Air Quality Standard (NAAQS) for ozone in the Baton Rouge area during the month of July, 2012. Please see the table below for more detailed information on statewide ozone readings and the graph on page two for daily air quality index levels in the Baton Rouge area during July.

Air Quality Action Days (ozone): July 2

PM_{2.5}

There were no violations of the NAAQS for PM_{2.5} in the Baton Rouge area during the month of July, 2012. Please see the chart and table on the next page for detailed information on PM_{2.5} levels throughout the state.

Other Areas of the State

OZONE

There were no days that exceeded the National Ambient Air Quality Standard (NAAQS) for ozone in areas of the state other than Baton Rouge during the month of July, 2012. Please see the table below for more detailed information on air quality levels during the month of July.

Air Quality Action Days (ozone): New Orleans — July 2

PM_{2.5}

There were no violations of the NAAQS for PM_{2.5} during the month of July, 2012. Please see the chart and table on the next page for detailed information on PM_{2.5} levels throughout the state.

Statewide 8-HR Ozone Readings Above 75 ppb - July 2012

DATE	AQI	8-HR OZONE Concentration (ppb)	MONITORING SITE
7/24/2012	101	76	Pride



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Good

Moderate

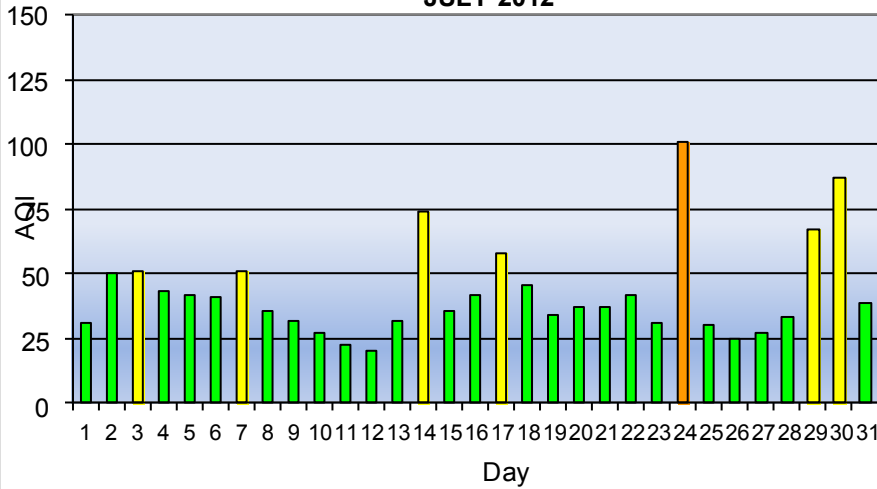
Unhealthy for Sensitive Groups

Unhealthy

Very Unhealthy

Hazardous

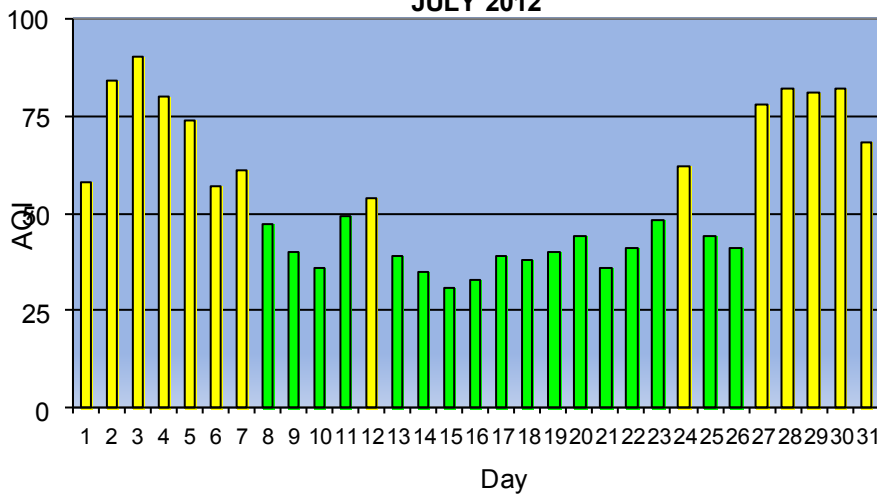
**Baton Rouge Area Daily Maximum AQI For Ozone
JULY 2012**



Statewide High PM_{2.5} 24-Hour Average Readings - JULY 2012

DAY	UG/m3	AQI	SITE
1	18.3	58	Westlake
2	28.7	84	Lafayette
3	31.3	90	Monroe
4	27.4	80	Chalmette Vista
5	24.9	74	Chalmette Vista
6	18	57	Chalmette Vista
7	19.7	61	Chalmette Vista
8	14.6	47	Chalmette Vista
9	12.3	40	Chalmette Vista
10	11	36	Chalmette Vista
11	15.2	49	Chalmette Vista
12	16.9	54	Chalmette Vista
13	11.9	39	Chalmette Vista
14	10.8	35	Chalmette Vista
15	9.6	31	Capitol
16	10.3	33	Alexandria
17	12	39	Monroe
18	11.6	38	City Park
19	12.2	40	Monroe
20	13.5	44	Alexandria
21	11.1	36	City Park, Chalmette Vista
22	12.7	41	Capitol
23	14.9	48	Chalmette Vista
24	19.8	62	Chalmette Vista
25	13.7	44	Monroe
26	12.6	41	Westlake
27	26.3	78	Alexandria
28	28	82	Alexandria
29	27.8	81	Chalmette Vista
30	28.2	82	Alexandria
31	22.4	68	Monroe

**Statewide Daily Maximum AQI For PM_{2.5}
JULY 2012**



Baton Rouge Climate Summary—July 2012

*Prepared by: Jay Grymes

(based on available preliminary data as of August 13, 2012)

July continues 2012's run of warmer-than-normal months, albeit just barely -- July 2012's average temperature of 83.3°F, 0.3° above the monthly norm. July marks eight straight months at Metro Airport with an above-average mean monthly temperature.

As is true for much of the U.S., 2012 remains on track to be the "warmest" year on record for Baton Rouge (since at least 1930). For the year-to-date, the average temperature for Metro Airport is more than 3° above the 30-year norm for the January-thru-July period and nearly 1°F warmer than the previous "warmest" spell (1990) through July. (1990 also ranks as the "warmest" year since 1930.)

Although July was warmer-than-normal, daily maximum temperatures during the month averaged slightly below the 30-year normal at 92.0°F. Daily highs reached the 90°s on 24 dates (roughly average for July), with two periods of mid to upper 90°s: during July 1-5 and again on July 29th and 30th. But it was mainly the daily minimums that led to July's above-normal monthly temperature: July's minimum temperature of 74.6°F was nearly a full degree above the monthly norm. In fact, all 31 days posted minimums above 70°, with minimums of 75° or more on 15 dates -- a reflection of a persistent warm-and-moist Gulf air mass in place during much of the month.

Elevated temperatures and high humidity prompted the National Weather Service to issue back-to-back **Heat Advisories** for the Baton Rouge metro area on July 30th and 31st. Dew point temperatures remained in the mid to upper 70°s through both days. With highs climbing well up into the 90°s, the area saw Heat Index readings (the 'feels like' temperature in the shade) rise above the 105° mark for a number of hours during both afternoons. According to the National Weather Service, a Heat Index at or above 105° is deemed "Dangerous," and several hours of such heat stress can cause heat exhaustion, heatstroke or worse.

Table 1: Average "daylight hours" sky conditions (to 12,000 ft) during July 2012, based on automated ASOS observations from Baton Rouge's Metro Airport.

Sky Condition: Sunrise to Sunset (Sky Coverage)	Clear to Mostly Sunny (0/10ths – 3/10ths)	Partly Cloudy / Partly Sunny (4/10ths – 6/10ths)	Mostly Cloudy to Cloudy (7/10ths – 10/10ths)
No. Days	23	7	1

July's 23 days of "fair to clear skies" are likely to be somewhat above average for the month. Not surprisingly, highs reach the 90°s on 20 of the 23 "fair sky" days, with "fair sky" days accounting for all 9 July dates when temperatures reach 95° or more.

Sunrise-to-sunset periods for Baton Rouge during July -- range from 14.1 hours (July 1) to 13.6 hours (July 31).

Baton Rouge Climate Summary—July 2012

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(based on available preliminary data as of August 13, 2012)

Table 2: July 2012 rainfall for selected sites across the greater Baton Rouge metro area. (Data are preliminary and provided courtesy of the National Weather Service, the LSU Southern Regional Climate Center, the LSU AgCenter, and the CoCoRaHS Volunteer Network.)

Rainfall-Recording Site	Monthly Rainfall	Monthly DFN	No. Days ≥ 0.01"	No. Days ≥ 1.00"
<i>NWS Cooperative Network Sites</i>				
BR – Metro Airport	6.60"	+1.64"	16	3
BR - Concord Estates	9.03"	+2.83"	14	2
BR - Sherwood Forest	7.57"	+1.58"	17	2
Clinton	7.33"	+2.60"	11(e)	2
Denham Springs	10.22"	+4.30"	16	6
Dutchtown	7.40"	--	20	2
Gonzales	9.52"	+3.47"	19	3
Livingston	5.73"	-0.05"	12	1
New Roads	10.01"	+5.76"	17	2
Oaknolia	8.58"	+3.48"	17	4
Plaquemine	10.46"	+5.42"	18	3
Port Allen	8.54"	+3.18"	16	2
St. Francisville	7.86"	+3.51"	18	0
<i>CoCoRaHS Volunteer Observers</i>				
Shenandoah 2.1 W (LA-EB-18)	5.53"(i)	--	M	M
Shenandoah 1.5 E (LA-EB-22)	6.87"	--	18	2
Shenandoah 0.8 W (LA-EB-36)	4.13"(i)	--	M	M
Monticello 3.0 ENE (LA-EB-19)	13.02"	--	16	4
Monticello 3.0 SSW (LA-EB-20)	5.47"(i)	--	M	M
Monticello 4.6 NNE (LA-EB-31)	6.57"	--	13	2
Baton Rouge 2.7 SW (LA-EB-2)	8.72"	--	15	3
Baton Rouge 3.5 E (LA-EB-14)	12.26"	--	16	3(e)
Baton Rouge 2.5 E (LA-EB-27)	7.04"	--	20	1
Baton Rouge 4.3 S (LA-EB-41)	5.29"	--	15	1
Baton Rouge 1.4 WSW (LA-EB-46)	9.20"	--	16	4
Baton Rouge 5.3 S (LA-EB-47)	6.48"	--	11	1
Baton Rouge 2.1 S (LA-EB-48)	9.99"	--	13	3
Inniswold 2.8 S (LA-EB-42)	7.41"	--	17	2
Brownfields 5.8 NE (LA-EB-9)	8.88"	--	16	3
Zachary 3.5 WNW (LA-EB-28)	4.85"	--	17	2
Gonzales 4.0 S (LA-AS-5)	7.45"	--	20	2
Gonzales 1.8 NE (LA-AS-9)	8.36"	--	19	3
Prairieville 1.8 NW (LA-AS-10)	8.30"(i)	--	M	M
Port Vincent 4.4 W (LA-AS-2)	7.26"	--	14(e)	3
Wakefield 0.9 WNW (LA-WF-4)	8.85"	--	16	4
<i>Additional Metro Area Sites</i>				
LSU Campus (LA-EB-33)	9.14"	--	15	3
WAFB-TV, Downtown BR	7.53"	--	16	1
LSU AgCenter Ben Hur Farm	7.25"	--	19	2
LSU AgCenter St. Gabriel	7.42"	--	19	2

DFN - Departure-from-Normal , "--" - Normals Not Available , M - Missing Value

(e) - Estimated Value , (i) - Incomplete Total

Baton Rouge Climate Summary—July 2012

**Prepared by: Jay Grymes*

(based on available preliminary data as of August 13, 2012)

Baton Rouge Metro Airport's rainfall for July was 6.60", more than 1" above the 30-year July norm, and the first month since March with above-normal rainfall for that location. Although rainfall during the prior three months (April-June) was more than 4" below average, a moderately "wet" first-quarter of 2012 offsets the spring shortage. January-thru-July rainfall for Metro Airport stands at 37.87", roughly 2" above the 7-month norm.

Tables 2 and 3 display a broad range in July rainfall totals across the greater Baton Rouge metro area, ranging from less than 5" (near Zachary) to more than 13" (east-central East Baton Rouge Parish). In fact, although July rains for Metro Airport were above normal, the Metro AP's 6.60" is among the six lowest monthly totals for the region. Based on 34 sites in Table 2 (with 'complete' monthly records), metro area regional rainfall for July 2012 averaged 8.20", with a median of 7.72" -- both values far above Metro Airport's 1981-2010 normal of 4.96" for July. Indeed, of the twelve regional sites with 30-year normals (Table 2), half reported monthly totals more than 3" above normal; only Livingston reported a below-normal July total.

Table 3: Distribution of July 2012 rain totals based on sites (Table 2) with complete monthly records.

No. Stations ≤ 2.00"	No. Stations 2.01" - 3.00"	No. Stations 3.01" - 4.00"	No. Stations 4.01" - 5.00"	No. Stations 5.01" - 6.00"	No. Stations ≥ 6.00"	No. Stations ≥ 10.00"
0	0	0	1	2	31	5

Most of the metro area's July rains fell during the first half of the month (Fig. 1), with a large portion arriving during the second week of the month. A look at rainday frequencies shows that most locations reported rain on half or more of July days. For Metro Airport, the 16 raindays during July 2012 is just slightly above average and matches the regional median number of raindays for the month.

It is not surprising that July proved wetter-than-normal for the region. Ten sites recorded rain on 18 or more days, with three sites reporting 20 raindays during July. The 34 metro area sites averaged two July days with an inch or more of rain, with five sites posting 4 or more days with 1" or more of rain. In addition, daily totals of 2" or more were not uncommon.

July 2012 reports from the Baton Rouge Metro Airport ASOS weather platform included:

- 12 days with thunder, roughly normal for the month of August at Metro Airport;
- 17 days with fog, including 1 day (July 8) with a brief period of "dense" fog (visibility < 1/4-mile) associated with an afternoon downpour; and
- 7 days with smoke and/or haze: July 3, 5, 8, 10, 13, 26 and 30.

Daily wind speeds at Metro Airport during July 2012 averaged a very modest 4.5 mph, below the 28-year July average of 5.1 mph. Daily winds during June averaged less than 8.0 mph on all 31 days, with only 2 days (July 10 & 31) with daily winds above 7.0 mph. Daily winds averaged less than 5.0 mph on 17 days, and under 3.0 mph on 8 days. Yet even with the light summer winds, preliminary data suggest that peak wind gusts reached the 30+ mph range on numerous dates, likely in response to the high frequency of thunderstorm events during the month.

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Drought Status:

July rains were sufficient to ease the 'dryness' reported in pockets of the Baton Rouge metro area during late June; the weekly **U.S. Drought Monitor** shows the metro area as "drought free" and even hints at limited improvements in the central part of the state. Given the climate outlooks for the coming weeks and months, there does not appear to be any serious drought threat on the horizon for metro Baton Rouge.

Tropical Outlook:

After a record-breaking "fast" start to the 2012 Hurricane Season -- with two May storms and two June storms -- the tropics remained "quiet" throughout the month of July. Although "storm-free" Julys are not uncommon -- the most recent being July 2009 -- over the past 25 years, fewer than 1-in-3 Julys passed without a 'named' tropical system developing in the Atlantic Basin. Tropical precursors were present, as a number of tropical waves traveled west-to-east through the tropical Atlantic during July 2012, but none showed signs of even limited development.

The peak of the hurricane season arrives in August and extends through September -- accounting for more than 60% of past Atlantic Basin storms. And for Louisiana, nearly 70% of her historical landfalls occurred during these two months! Fortunately, tropical forecasting experts continue to call for a "quieter" season (in terms of total storm counts) than what we saw in 2010 and 2011. Atlantic SSTs (sea-surface temperatures) are not as warm as those observed during the two previous tropical seasons, although basin SSTs are generally near-normal for this time of year over much of the tropical Atlantic.

At the same time, while still listed as officially "neutral" (*i.e.*, near normal), SSTs in the eastern equatorial Pacific continue to warm, and the consensus opinion among ENSO forecasters is that *El Niño* conditions will be confirmed in the coming weeks. Historically, tropical activity over the Atlantic is decreased during periods when an *El Niño* is present; *El Niños* are associated with greater mid- and upper-level wind shear over the Atlantic Basin, a significant inhibitor for tropical development over the basin.

Extended Outlook:

NWS Climate Prediction Center (CPC) forecasts for the late summer and early fall suggest a tendency towards continued warmer-than-normal weather in the coming months. The outlook for August-thru-October ('ASO') suggests nearly a 40% chance for significantly warmer-than-normal weather for the three-month period, with less than a 3-in-10 chance for temperatures to be significantly cooler-than-normal. The ASO outlook for rainfall suggests an ever-so-slight leaning towards a 'normal-to-wet' late summer and early fall.

It should be remembered that summer season forecast skill for temperatures is not especially strong for the Gulf Coast region, and the skill is rather poor for seasonal rainfall. A large part of the seasonal forecast limitations for the Gulf Coast region at this time of year can be attributed to easterly wave and tropical system activity. As we know all too well in south Louisiana, over the course of a few days a tropical storm or hurricane can deliver the equivalent of two to three months' worth of rain!

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Figure 1: July 2012 *Daily Maximum and Minimum Temperatures and Precipitation* from the Baton Rouge Metro Airport ASOS.

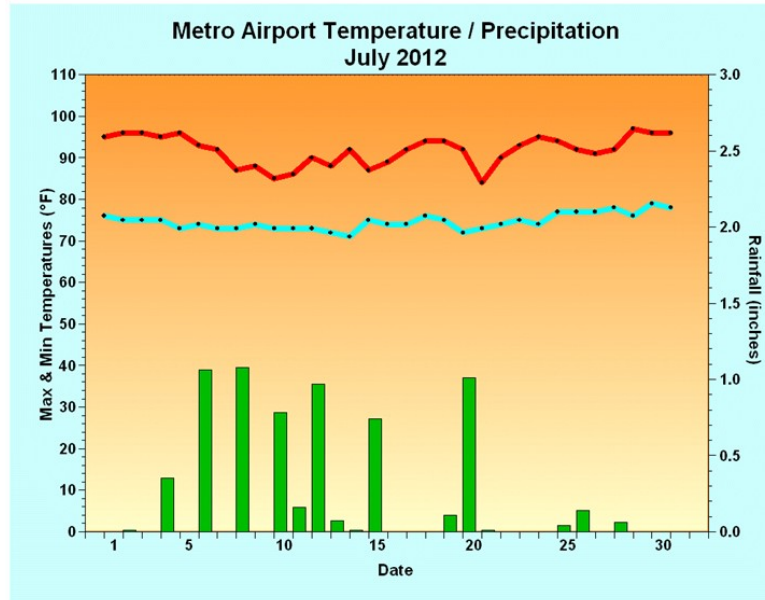
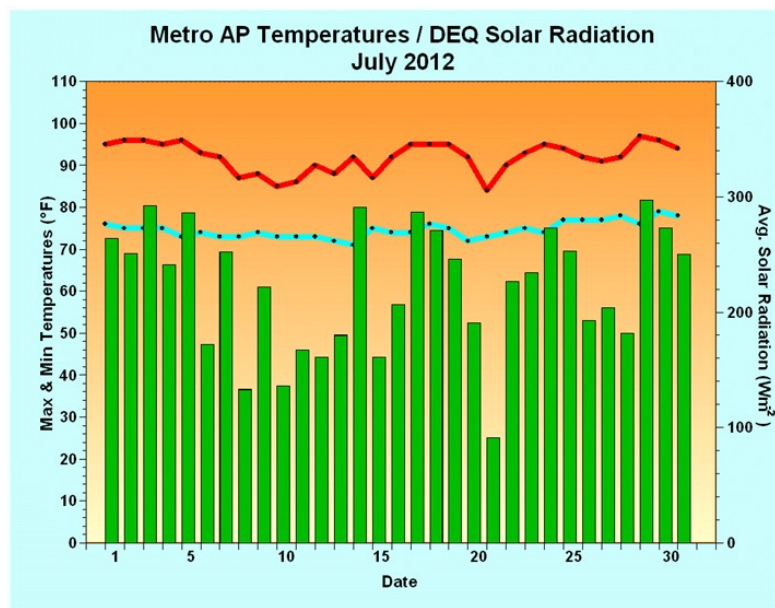


Figure 2: July 2012 *Daily Average Hourly Solar Radiation* (derived from the average of two DEQ solar radiation monitoring sites) and *Daily Maximum and Minimum Temperatures* from the Baton Rouge Metro Airport ASOS.



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Figure 3: Weekly **U.S. Drought Monitor** depiction for 31 July 2012.

Source: <http://drought.unl.edu/DM/>

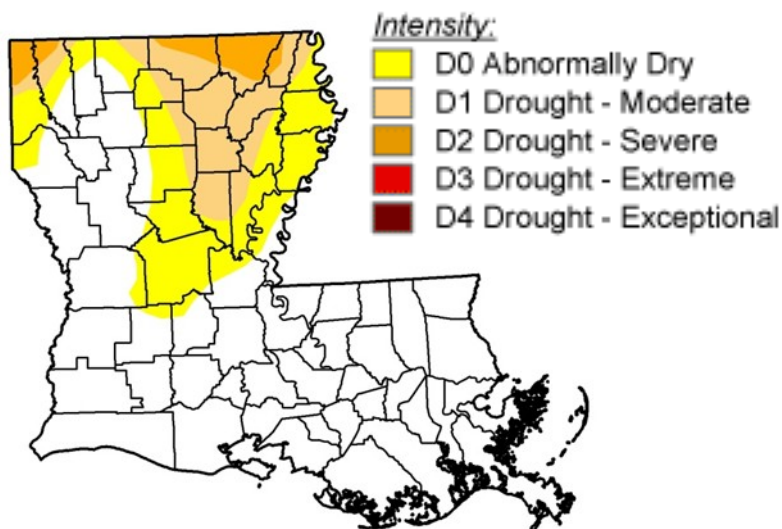


Table 4: July 2012 Preliminary 'Local Storm Reports' as posted by the NWS/SPC for the greater Baton Rouge metro area.

Date	Time (CDT)	Event	Location	Parish
--	--	** No Reports **	-----	--

Acknowledgements:

- National Weather Service offices serving Louisiana
- LSU Southern Regional Climate Center (SRCC)
- Louisiana Office of State Climatology (LOSC)
- LSU AgCenter / LAIS AgWeather Monitoring Program
- CoCoRaHS Volunteer Network
- U.S. Drought Monitor (<http://drought.unl.edu/DM/>)
- NWS Climate Prediction Center (NWS/CPC)
- NWS Storm Prediction Center (NWS/SPC)
- NWS Hydrometeorological Prediction Center (NWS/HPC)
- NOAA/National Climatic Data Center (NCDC)
- WAFB-TV (Ch. 9), Baton Rouge

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*Jay Grymes, LSU AgCenter Climatologist and WAFB Chief Meteorologist, provides the climatology portion of this report as a free service to DEQ and the citizens of Louisiana.